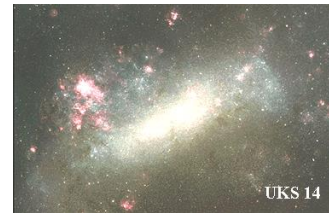
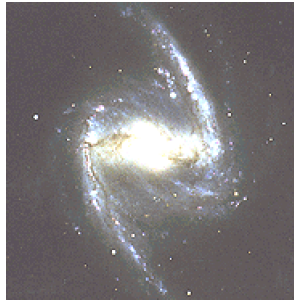


## Main differences between galaxy and constellation

<http://www.preservearticles.com/201101022260/difference-between-galaxy-and-constellation.html>

### Galaxy

- It is a collection of billions of stars.
- It can be elliptical , spiral or irregular.



- There are billions of galaxies in the Universe.
- There are not many galaxies which are visible to the naked eyes.

### Constellation

- It is a collection of only a few stars.
- Stars in the constellation are arranged in patterns resembling some animals or human beings but they're not really at the same distance from us.



- There are only about 88 constellations, all of which are included in our galaxy, the Milky Way or Via Lactea.
- Most of constellations can be observed with the help of naked eyes.

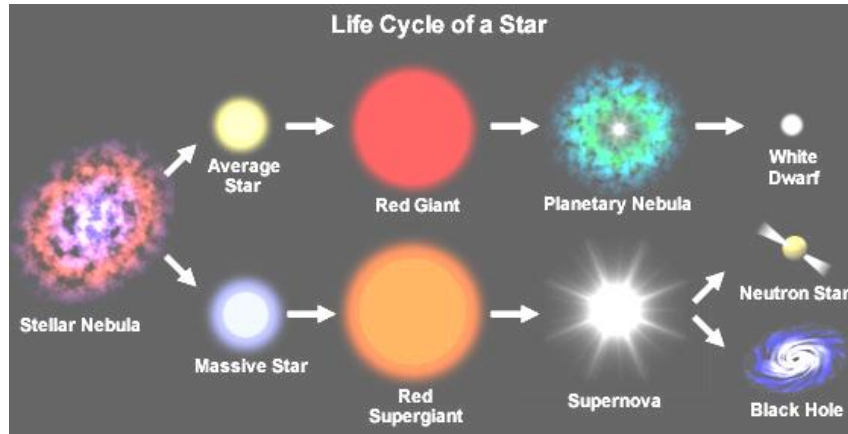
For other celestial bodies:

<http://www.seasky.org/celestial-objects/celestial-objects.html>



## Stars

A **star** is a very large hot ball of gas that appears as a small bright light in the sky at night. It releases energy because of the thermonuclear fusion reactions which take place in its core.



## Nebulae

A nebula is a cosmic cloud of gas and dust floating in space. Nebulae are the basic building blocks of the universe where new stars and star systems are continuously being born.



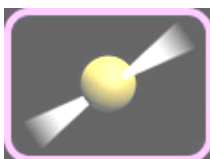
## Star Clusters

Many stars in the universe are found grouped together as star clusters. These clusters are held together by a common gravitational bond. They vary in size and shape as well as number of stars.



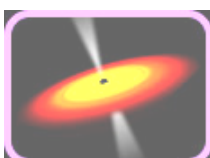
## Galaxies

Galaxies are defined as large groupings of stars, dust, and gas held together by gravity. They vary greatly in size and shape. Most of the objects we know of in space are contained within galaxies.



## Pulsars

Pulsars are star-like objects that seem to be emitting quick pulses of radio waves. A pulsar is basically a rapidly spinning **neutron star**. A neutron star is the highly compacted core of a dead star, left behind in a supernova explosion.



## Black Holes

Black holes are formed from the cores of super massive stars and can best be described as regions of space where so much mass is concentrated that nothing, not even light, can escape the gravitational pull.



## Dark Matter

Dark Matter can't be seen, but its presence has been revealed by observing of the universe. Recent estimates indicate that more than 90% of the matter in the universe is invisible.

The big bang theory

[https://www.esa.int/esaKIDSen/SEMSZ5WJD1E\\_OurUniverse\\_0.html](https://www.esa.int/esaKIDSen/SEMSZ5WJD1E_OurUniverse_0.html)

## The origin of the universe: The Big Bang

Most astronomers believe the Universe began in a Big Bang about 14 billion years ago. At that time, the entire Universe was inside a bubble that was thousands of times smaller than a pinhead. It was hotter and denser than anything we can imagine.

Then it suddenly exploded. The Universe that we know was born. Time, space and matter all began with the Big Bang. In a fraction of a second, the Universe grew from smaller than a single atom to bigger than a galaxy. And it kept on growing at a fantastic rate. It is still expanding today.

As the Universe expanded and cooled, energy changed into particles of matter and antimatter. These two opposite types of particles largely destroyed each other. But some matter survived. More stable particles called protons and neutrons started to form when the Universe was one second old.

Over the next three minutes, the temperature dropped below 1 billion degrees Celsius. It was now cool enough for the protons and neutrons to come together, forming hydrogen and helium nuclei.

After 300 000 years, the Universe had cooled to about 3000 degrees. Atomic nuclei could finally capture electrons to form atoms. The Universe filled with clouds of hydrogen and helium gas.

**Put the following events in order:**

- **Formation of protons and neutrons**
- **First complete atoms: beginning of elements**
- **The entire Universe in less than a pinhead**
- **Formation of nuclei of first elements**
- **The beginning of the expansion**